6270

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. PATTON, *Director*

Aleutian Islands
State: ~~ALASKA~~

DESCRIPTIVE REPORT

~~*Topographic*~~
Hydrographic } *Sheet No.* 24137

LOCALITY

~~ALASKA~~

DAVIDSON BANK
SOUTH OF ~~UNIMAK ISLAND~~

~~ALEUTIAN DEEP~~

19 37

CHIEF OF PARTY

RAY L. SCHOPPE

U. S. GOVERNMENT PRINTING OFFICE: 1930

6270

Form 537
Ed. Dec., 1930

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 24137

REGISTER NO. H-6270

State ~~ALASKA~~ Aleutian Islands

General locality ~~ALEUTIAN DEEP~~

Locality SOUTH OF ~~UNIMAK ISLAND~~ DAVIDSON BANK

Scale 1:240,000 Date of survey July 29-30, 1937

Vessel DISCOVERER

Chief of Party RAY L. SCHOPPE

Surveyed by PERSONNEL ON DISCOVERER

Protracted by C. A. BURMISTER

Soundings penciled by C. A. BURMISTER

Soundings in fathoms ~~feet~~

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by R.H.C.

Verified by R. H. Carstens

Instructions dated Supplemental of February 28th., 1, 1937

Remarks:

U. S. GOVERNMENT PRINTING OFFICE. 1933

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET 24137 H-6270

PROJECT HT-208

AUTHORITY:

THIS survey was executed under authority contained in the Director's Supplemental Instructions dated February 28th., 1937.

SCALE:

This survey is on a scale of 1:240,000. The purpose was to obtain data for the delineation of the Aleutian Deep. The survey joins Sheet (Field) No. 8237 H-6279 on the north, and makes a satisfactory junction with the survey of Davidson Bank, which is covered by Sheet (Field) No. 8237. H-6279

SURVEY METHODS:

Standard practice for off-shore surveys was followed, using the fathometer for sounding, and Radio-acoustic-ranging for the control of the lines.

The standard type-312 Fathometer was used throughout the survey. Its performance was, in general, satisfactory. There was considerable interference to sounding due to heavy water noises during the evening of July 29th., 1937 due to an increasingly heavy sea raised by a force-7 wind.

During the course of this survey, there were secured twenty-three (23) comparisons between fathometer soundings, and the depths as recorded on the chronograph tapes for the bombs. The bomb-depth as shown for Position 12-A is obviously in error by approximately two (2) seconds. The mean variation between the fathometer and the bomb depths (mean of the arithmetic differences) is about 36 fathoms; while the mean algebraic difference is practically 0 fathoms. There appears to be no consistancy in the differences, as they are about equally divided plus and minus.

A table of these comparisons follows:

POSITION	TIME INTERVAL IN SECONDS	DEPTH @ (3) 800 f/s	FATHOMETER (4) @ 800 f/s	(4)-(3)
10- A	04.93	1937	2000	63
12	07.37	2953	2060	-893
14	06.45	2585	2475	-110
20	09.21	3689	3720	- 31
21	09.24	3701	3721	20
22	08.93	3577	3580	3

POSITION	TIME INTERVAL IN SECONDS	DEPTH @ (3) 800 f/s	FATHOMETER (4) @ 800 f/s	(4)-(3)
24- A	08.28	3317	3350	23
26	07.61	3049	3100	51
29	07.33	2937	2985	48
30	07.40	2965	3005	40
31	07.38	2957	2950	- 7
33	07.86	3149	2970	-170
36	07.39	2961	2965	4
37	07.74	3101	3075	- 26
38	08.88	3557		
39	09.20	3685	3725	40
41	08.65	3465	3500	35
43	08.90	3565		
44	06.70	2685	2690	5
47	05.75	2305	2330	25
50	05.62	2253	2250	- 3
1- B	05.58	2237	2225	- 12
9	02.63	1057	1050	- 7

In computing the bomb depths, a velocity of 800 fms/sec was used as this is the velocity for which the fathometer is calibrated. They have not been corrected in the above table for changes in velocity due tothe temperature, salinity, and depth of the water. Time intervals as scaled from the tapes were corrected for the 'ship's run' (the time interval corresponding to the distance the ship has advanced from the time of throwing over the bomb and its explosion). The bombs were assumed to have sunk about 10 fathoms in each case.

Example:
Position 44-A

Scaled time interval	06.65 secs
Correction for ship's run	.05
Total	06.70 secs

Depth by bomb $\frac{1}{2}$(06.70 x 800 - 10) . . . . . 2685 fms
Depth by fathometer . . . . . 2690 fms

The greatest depths encountered were 3750 fathoms, which, when corrected, were 3875 fathoms. The fathometer corrections have been made the subject of a special report, which accompanied the report on the lines across the Gulf of Alaska. The corrections are tabulated on a separate sheet and made a part of the sounding records. Also found 3880 fms. in lat. 52°44', long. 164°28'.

lat. 52°56', long. 163°37'.

The entire line was controlled by Radio Acoustic Ranging methods. The two stations as established for the survey of Davidson Bank, served thissurvey as well. They are described in the report covering Sheet (Field) No. 8237. H-6279 A maximum time interval of 157.93 seconds was obtained during the course of this survey. A horizontal velocity of 1467 meters/second was used throughout this survey: this being the same velocity as was used on Sheet (field) No. 8237. H-6279 Positions on the smooth

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. H6270

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	65
Number of positions checked	9
Number of positions revised	7
Number of soundings recorded	249
Number of soundings revised	0
Number of signals erroneously plotted or transferred	0

Date: May 28, 1938

Verification by R.H. Carstens Time: 22 hr.

Review by Harold W. Murray Time: 3½ "

sheet were plotted by first converting time to distance, and plotting with a beam compass and meter-bar. This obviated the necessity of drawing distance curves, the plotting being done the same day the projection was completed. No comment made in Rev. H.W.M.

DESCREPANCIES:

There were no descrepancies discovered during the course of this survey which were not adjusted immediately.

TIDAL DATA:

Such tide reducers as are used, were taken from marigrams from the Standard Automatic Tide Gage established at King Cove, Alaska in May 1937 and maintained throughout the season.

COMPARISONS WITH PREVIOUS SURVEYS:

Since this is an original survey, there is no basis for a comparison.

STATISTICS:

DATE	DAY	MILES OF SOUNDINGS	SOUNDINGS		POSITIONS	
July 29	A - 1	177.4	162 (w)		31 (b)	20 (c)
30	B - 1	53.0	48 (w)	39 (r)	11 (b)	3 (c)
	Totals	230.4	210 (w)	39 (r)	42 (b)	23 (c)

(w) Fathometer white light
(r) Fathometer red light
(b) bomb positions
(c) change of course or speed.

Respectfully submitted

Clarence A. Burmister
Jr. H. & G. Engr., C. & G. Survey

Approved and forwarded

Ray L. Schoppe
Chief of Party

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Ed. Feb. 1935

TIDE NOTE FOR HYDROGRAPHIC SHEET

April 13, 1938.

Division of Hydrography and Topography:

✓ Division of Charts: Attention Mr. E. P. Ellis

Plane of reference
~~Tide Reducers~~ approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 6270

Locality South of Davidson Bank, Aleutian Islands.

Chief of Party: Ray L. Schoppe in 1937
Plane of reference is mean lower low water reading
6.1 ft. on tide staff at King Cove (Off Limit of H-6270)
17.5 ft. below B.M.1

Height of mean high water above plane of reference is 6.1 feet.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE

	Remarks	Decisions
1		see H. 6139
2		USGB decision
3	Baker- Named King's Cove by Fish Comm. First charted as Kings Cove 8860 Ed. 1902 off sheet (Location of T.G.)	
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		

M 234

GEOGRAPHIC NAMES

Survey No. H6270

Name on Survey	A, On Chart No. 8860	B, On previous survey No. 7-414s	C, On U. S. quadrangle Pavlof Maps Dist.	D From local information	E On local Maps	F ~~P. O. Guide or Map~~ Bakers Dict	G Rand McNally Atlas	H U. S. Light List	K USCP	
✓ Davidson Bank	✓									1
✓ Unimak Pass	✓									2
King Cove	✓	✓	✓			Kings Cove			✓	3
Pacific Ocean	✓									4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

Names underlined in red approved by GAE on 4/15/38

M 234

HYDROGRAPHIC SURVEY NO. H6270

Smooth Sheet Yes

Boat Sheet None

Records; Sounding One Vols., Wire Drag ---- Vols., Bomb One Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals ----

Landmarks for Charts (Form 567) ~~None~~

Statistics Yes

Approved by Chief of Party None

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service (Circular Nov.30, 1933) None

Hydrography: Total Days 2 ; Last Date July 30, 1938

Remarks

2776

FORM M-238

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT } No. H-6270
~~PHOTOSTAT OF~~ ~~No.~~

received April 7, 1938
registered April 11, 1938
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	t. b. Reed

✓ HBR

Verification

Report on H 6270

Surveyed in 1937 ✓

Chief of Party - R.L. Schoppe

Surveyed by personnel on Discoverer

Positions plotted by C.A. Bumister

Soundings plotted by C.A. Bumister

Verified and inked by R.H. Carstens

1. The records conform to the requirements of the general instructions. No boat sheet was received with the smooth sheet.

2. This was more or less of an exploratory survey and no depth curves were drawn. (Indicated by Reviewer)

3. The field plotting was completed to the extent prescribed in the Hydrographic Manual

4. Seven positions 14A, 15A, 30A, 47A, 1B, 3B and 4B, and the soundings adjacent thereto were replotted. The positions were revised so as to more closely agree with the dead reckoning. The soundings on 38A and 43A were secured by a chronograph measurement of the time required for the sound of a bomb explosion to travel to the bottom.

The first soundings after positions 16A and 11B, the first sounding before 19A and the second sounding before 31A were marked doubtful

in the sounding record at the time they were taken.

5. The hydrophone stations TIGALDA and LUTKE were transferred from H 6279

Respectfully Submitted
R. H. Carstens

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6270 (1937) FIELD NO. 24137

South of Davidson Bank, Aleutian Islands
Surveyed in July 1937, Scale 1:240,000
Instructions dated Feb. 28, 1936 (DISCOVERER)

Fathometer Soundings. RAR control.

Chief of Party - Ray L. Schoppe.
Surveyed by - Personnel on DISCOVERER.
Protracted by - C. A. Burmister.
Soundings plotted by - C. A. B.
Verified and inked by - R. H. Carstens.

1. Conditions of Records.

The records are neat and legible and conform to the requirements pf the Hydrographic Manual except that no boat sheet was submitted.

The Descriptive Report is clear and satisfactorily covers all items of importance.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the Instructions for the Project.

3. Shoreline and Signals.

This is an offshore sheet and no shoreline is shown.

The control consisted of two RAR stations.

The velocity of sound (1467 m.) used for H-6279 (1937), which was based on experimental velocities in depths of 30 to 72 fathoms is, in all probability, too low for the depths on H-6270 (1937). It is not believed, however, that the resulting displacement of the outer end of the sounding line is great enough to cause concern.

4. Sounding Line Crossings.

No cross lines were run, but they are considered to be unnecessary on these deep sea lines across the Aleutian Deep".

5. Depth Curves.

Within the limits of the survey, the usual depth curves may be satisfactorily indicated.

6. Junctions with Contemporary Surveys.

The junction on the north with H-6279 (1937) will be considered in the review of that survey.

7. Comparison with Prior Surveys.

No prior surveys have been made by this Bureau in this area.

8. Comparison with Charts 8860 (New Print dated Jan. 12, 1938)
Chart 8802 (New Print dated Dec. 13, 1937).

Within the limits of the present survey the chart contains no information that needs consideration in this review.

9. Field Plotting.

Field protracting and plotting were accurate and conform to the requirements of the Hydrographic Manual.

10. Additional Field Work Recommended.

No additional field work is required.

11. Superseded Prior Surveys.

No prior surveys have been made by this Bureau in this area.

12. Reviewed by - Harold W. Murray, June 8, 1938.

Inspected by - E. P. Ellis.

Examined and approved:

Thos B Reed
T. B. Reed,
Chief, Section of Field Records.

K.T. Adams
Chief, Division of Charts.

Fred. L. Peacock
Chief, Section of Field Work.

G Rude
Chief, Division of H. & T.

applied to chart 8860 - Dec 6 - 1938 J.G.h.
" " " 8802 8/24/39 J.M.A.